

**Patent Claims**

1. An aerosol therapy device having a nebuliser (1) and a PDA (2), in which
  - a) said nebuliser (1) is equipped with
    - i) a controllable aerosol generator (4),
    - ii) at least one sensor device (8a, 8b, 8c) for generating at least one therapy-relevant measuring signal, in particular with regard to aerosol production and aerosol consumption,
    - iii) a processing means (9) for generating therapy data by means of the signal-based processing of the at least one measuring signal,
    - iv) a communication device (10) for transferring the therapy data processed in relation to signals to the PDA (2) and for receiving control data from the PDA (2), and
    - v) a control means (7) for activating said aerosol generator (4) based on the control data received from the PDA,and
  - b) said PDA (2) is equipped with
    - i) a communication device (11) for receiving the therapy data transmitted by the membrane nebuliser (1) and for transferring control data to the membrane nebuliser (1), and
    - ii) a device (23) for generating control data by means of the therapy-based evaluation of the transmitted therapy data.
2. An aerosol therapy device according to claim 1, characterised in that the controllable aerosol generator is an electrically operated aerosol generator and in particular a membrane aerosol generator.

3. An aerosol therapy device according to claim 1 or 2, characterised in that the communication devices (10, 11) enable a communication link between the membrane nebuliser (1) and the PDA (2) based on infrared or radio emissions or by means of a cable.
4. An aerosol therapy device according to one of the previous claims, characterised in that the sensor device comprises a sensor (8a) for detecting the presence and/or the density of an aerosol generated by the aerosol generator (4) and/or a sensor (8b) for detecting the operating state of the aerosol generator (4) and/or a sensor (8c) for detecting the environmental conditions and/or a sensor (8d) for detecting the respiratory flow of the user.
5. An aerosol therapy device according to one of the previous claims, characterised in that the device for generating control data by means of the therapy-related evaluation of transmitted therapy data comprises a program (23) which can be executed within the framework of the operating system (20) of the PDA (2).
6. An aerosol therapy device according to claim 5, characterised in that the program (23) is configured of program modules (23a, 23b, 23c, 23d), of which at least one module (23b) carries out the evaluation of the therapy data processed in relation to signals and generation of control data.
7. An aerosol therapy device according to claim 5 or 6, characterised in that a program module (23b) carries out the evaluation of the therapy data processed in relation to signals and generation of control data.
8. An aerosol therapy device according to claim 5, 6 or 7, characterised in that a communication module (23a) is provided for receiving therapy data processed in relation to signals and for transmitting control data via the communication device (11) of the PDA (2).
9. An aerosol therapy device according to one of claims 5 to 8, characterised in that a further program module (23c) is provided for displaying therapy and/or control data on a display means (15) of the PDA (2).
10. An aerosol therapy device according to one of claims 5 to 8, characterised in that a telecommunication module (2d) is provided for the establishment of a remote data connection, for example via the Internet, for transmitting therapy and/or control data and/or for receiving program modules.

11. An aerosol therapy device according to one of claims 5 to 10, characterised in that the program and/or one of the program modules (23a, 23b, 23c, 23d) is stored on a memory card (12) which can be inserted into a slot of the PDA (2).
12. An aerosol therapy device according to one of the previous claims, characterised in that the control means (7) activates the membrane aerosol generator (4) based on control data stored in said control means (7) if the control means (7) is not receiving any control data from the communication device (10).